which data cells are transferred between source and destination nodes. The method includes receiving a control cell on a virtual channel from a source node, generating a management event upon receipt of the control cell, and processing the management even to compute resource management data. Upon the subsequent receipt of a control cell on a virtual channel from a destination node, the control cell from the destination node is modified using the computed resource management data and transmitted over the first virtual channel toward the source node. --

Please replace the paragraph beginning at page 5, line 1 with the following rewritten paragraph:

-- Network access equipment 101-103 may combine data from multiple sources. For example, data from a LAN 115 and circuit oriented traffic, such as a T1 connection from a private branch exchange phone system (PBX) 110, may each be converted to ATM cells at network access equipment 101 and the resulting cells multiplexed over a trunk interface 141. VPI and VCI information in transmitted ATM cells is used to uniquely identify data sources and destinations at network access equipment 101 and at switches 131-134 within the ATM network 130. For example, by assigning a unique VPI/VCI value to ATM cells transporting LAN 115 data and a different VPI/VCI value to cells transporting PBX 110 data, independent routing and logical separation of the PBX 110 and LAN 115 data can be maintained. --

Please replace the paragraph beginning at page 7, line 12 with the following rewritten paragraph:

-- In general, a particular set of VPI/VCI values is meaningful at a single switch along an end-to-end path through the ATM network. Thus, for example, the VPI/VCI values assigned

by the access unit 101 allow routing between input and output ports of switch 131, but those values will not properly route the cell through switches 132-134 or through access unit 103. To enable routing along the entire end-to-end path, each ATM switch maintains a translation table used to track and translate (reassign) a cell 's VPI/VCI values as the cell is transported through the switch. For example, to transport an ATM cell between access unit 101 and 103 on a path through switches 131, 132, 134, 133, VPI/VCI translation information is established at each point in the path between 101 and 103. When the cell originating at access unit 101 is received at the switch 131, the VPI/VCI information in the user-network interface header allows routing to the proper output port on the switch 131 and, prior to the cell exiting the switch 131 through that output port, the VPI/VCI information is replaced with new VPI/VCI information to allow routing through switch 132. The process of determining an output port and replacing VPI/VCI information may be repeated at each switch along the end-to-end path. --

Please replace the paragraph beginning at page 7, line 26 with the following rewritten paragraph:

-- A class of service is associated with each ATM connection when the connection is established. In an ATM network based on ATM Forum standards, four classes of service have been defined. The first class, constant bit rate (CBR) specifies a fixed data rate connection. Switches in the ATM network 130 must reserve sufficient capacity to ensure that the specified data rate can be provided and may monitor incoming traffic to ensure that the connection from the user does not exceed the specified capacity. The second service class, variable bit rate (VBR) identifies both a sustained (nominal) and burst rate. In

general, a VBR service will provide data at a specified nominal rate but may increase its data rate up to a specified maximum during periods of peak traffic. A third class, unspecified bit rate (UBR), may be referred to as a best-effort service. UBR connections do not guarantee network capacity, and may result in cell discard. Finally, a fourth class, available bit rate (ABR) guarantees a minimum capacity and, when additional network capacity is available, allows bursts above the minimum rate without risk of cell loss. --

Please replace the paragraph beginning at page 9, line 4 with the following rewritten paragraph:

-- A source node may receive rate-control feedback from a destination node or an ATM network 130 (Fig. 1) element through which a virtual channel from the source passes. A number of rate control mechanisms can be used to detect and report congestion at various points along a virtual channel. For example, a switch can set the explicit forward congestion indication (EFCI) condition in an ATM data cell header (using the payload type field) being transmitted in a forward direction. In response, the destination system may set the CI bit in a BRM cell to indicate network congestion. A switch may also directly set the CI or NI bit in a forward or backward resource management cell to indicate that there is congestion in the network. If the CI or NI bit is sent in a FRM cell, the bit will remain set in BRM cells. Additionally, a switch can modify the ER field value in a FRM or BRM cell. --

Please replace the paragraph beginning at page 9, line 14 with the following rewritten paragraph:

-- Fig. 3 illustrates an ATM switch 300 providing resource management services. The switch 300 has three ports 310, 320, 330 connecting physical links to the switch 300. ATM cells sent to or from a port 310, 320, or 330 are processed by port circuitry and may be switched among ports by switching fabric 302. Each port includes, among other things, circuitry to process FRM 301 cells arriving from source nodes and BRM 303 cells directed back to the source nodes. The processing circuitry of port 310 is shown in detail and includes circuit elements 311-315. Ports 320, 330 may include circuitry similar to the circuitry of port 310 or, in a shared implementation, ports 320 and 330 may share one or more elements of circuitry 311-315 with port 310. For example, the processor 313, queue 312 and database 314 may be shared by all of the ports 310, 320, 330. --

Please replace the paragraph beginning at page 10, line 4 with the following rewritten paragraph:

-- As BRM cells pass through the switch 300 on a virtual channel back to a source node, the cells 303 are provided to BRM cell modification circuitry 315. The circuitry 315 can compare RM data in a BRM cell 303 with RM data in the database 314. To compare RM data in the cell 303 with RM data in the database 314, the circuitry 315 reads virtual channel (VPI/VCI) information from the cell 303 and retrieves a RM record associated with that virtual channel from the database 314. Based on the comparison between the data in the cell 303 and the data retrieved from the database 314, the circuitry 315 determines whether the RM data in the cell 303 is to be modified. In general, if the RM data in the cell 303 indicates a higher data rate than is indicated by the RM data in the

database 314, the rate indicated by the cell 303 is lowered. On the other hand, if the RM data in the cell 303 indicates a lower rate than that in the database 314, the RM data in the cell 303 is not modified. --

Please replace the paragraph beginning at page 10, line 15 with the following rewritten paragraph:

-- RM data in the database 314 is derived from the processing of data in FRM cells. As ATM cells pass through the port 310, they are provided to FRM cell processing circuitry 311. The circuitry 311 can detect FRM cells on each virtual channel processed by the port 310. When a FRM cell 301 is detected by the circuitry 311, the circuitry 311 generates a FRM event 316 and places the FRM event 316 in a queue 312. The FRM event 316 includes the FRM cell 301 data elements that are used in the calculation and updating of RM data in the database 314. An FRM event 316 may include virtual channel (VPI/VCI) data alone or may include virtual channel data along with other RM data and other cell 301 header and/or payload values. After the circuitry 311 has read needed data values from the cell 301, the cell 301 may be sent to other switch components, such as the switching fabric 302 for further switch 300 processing. --

Please replace the paragraph beginning at page 11, line 18 with the following rewritten paragraph:

-- Modification circuitry 315 may be a general purpose processor or special purpose circuitry configured to modify BRM cells. In a processor-based implementation, one or more of the FRM processing, queuing, RM algorithm execution, database storage, and BRM processing functions described with respect to circuit elements 311-315 may be performed by a special or

general-purpose processor rather than by a separate circuit element 311-315. In an arrival-time independent implementation, the calculation of RM data in the database 314 is performed independent of the arrival of FRM and BRM cells. For example, since FRM events are queued in queue 312, the processor 313 may complete RM algorithm calculations for a given FRM event after the FRM cell associated with that FRM event has departed the switch 300. --

Please replace the paragraph beginning at page 11, line 27 with the following rewritten paragraph:

-- In the exemplary implementation described above, RM data generation and BRM cell alteration was described with respect to port 310 elements. Implementations may also perform RM data generation and BRM cell alteration at other switch 300 elements. For example, FRM Event 316 may be generated in response to FRM cell switching by the switching fabric 302 and, likewise, BRM cell modification may occur during BRM cell switching by the switching fabric 302. Non-switch implementations may also be used. For example, RM data generation and BRM cell alteration may occur within an ATM add-drop multiplexer, in an ATM over SONET digital cross-connect device, or in another ATM network 130 (Fig. 1) device. Implementations may also include a single port attached to a single physical link shared by both source and destination virtual channels. --

In the claims:

Please amend claims 1, 10, and 16 as follows: